Republic of Yemen

Ministry of Higher Education & Scientific Research

21 SEPTEMBER UNIVERSITY of MEDICALS & APPLIEED SCIENCES

Faculty of Laboratory medicine..

Department of MICROBIOLOGY & IMMUNOLOGY

Course Specification of Infection control

Course No. (03.02.332)

2022/2023

FACULTY OF LABORATORY MEDICINE

Council for Accreditation & Quality Assurance

Course number:

Course name : 61-Infection control

I. Course Identification and General Information:					
1	**Course Title:**	Infection control			
2	**Course Code & Number:**	03.02.332			
3	**Credit Hours:**	**Theory Hours**			
		Lecture	**Exercise**	Practical	**Credit Hours**
		2	0	2	3
4	**Study Level/ Semester at which this Course is offered:**	4th year / 2nd Semester			
5	**Pre –Requisite (if any):**	Clinical Bacteriology Clinical, Virology and Mycology			
6	**Co –Requisite (if any):**	None			
7	**Program (s) in which the Course is Offered:**	Bachelor in laboratory medicine			
8	**Language of Teaching the Course:**	English			
9	**Study System:**	semester			
10	**Mode of Delivery:**	regular			
11	**Location of Teaching the Course:**	University Campus			
12	**Prepared by:**	Dr. Ghamdan Ahmed Altahish			
13	**Date of Approval:**	2022-2023			

II. Course Description:

The course covers the broad principles and practices of infection control that are essential for the prevention and management of infection in hospitals and health care institutions . The course focuses on students' understanding of community-acquired and health care associated infections. Covers infection control components, infection chain and breaking chain, route of hospital pathogen transmission, standard and isolation precautions ,aseptic technique, investigation of an outbreak of infection. occupational exposure management, waste management and environmental control, antibiotic stewardship and surveillance of antimicrobial resistance.

III. Alignment Course Intended Learning Outcomes with program outcomes

	III. Course Intended Learning Outcomes (CILOs)	Referenced PILOs
A. Knowledge and Understanding: ***Upon successful completion of the course, students will be able to:***		
a1	**Discuss** the core concepts of infection control	**A1**
a2	**Describe** the role of antibiotics resistance and stewardship	**A2**
a3	**List** major types of HAIS and their preventive steps	**A3**
B. Intellectual Skills: ***Upon successful completion of the course, students will be able to:***		
b1	**Analyze** the components of chain of the infection	**B2**
b2	**Describe** hospital infection with reference to the most common causative agents, mode of transmission and prophylaxis.	**B1**
C. Professional and Practical Skills: ***Upon successful completion of the course, students will be able to:***		
c1	Outline the basic principle for the practice if infection control	**C1**
D. Transferable Skills: ***Upon successful completion of the course, students will be able to:***		
d1	Educate the general public and to assist patients through acceptable customer service interactions	**D1**
d2	**Demonstrate** oral and written effective communication skills,	D2
d3	**Collaborate** with patients, communities, organizations, and with members of the health team.	**D1**

III. Alignment Course Intended Learning Outcomes with Teaching Strategies and Assessment methods :

(A) Alignment Course Intended Learning Outcomes of Knowledge and Understanding to Teaching Strategies and Assessment Strategies:

	Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
a1	Discuss the core concepts of infection control	• Interactive lectures • Self-learning • Discussion	• Written exam (mid and final terms and quizzes)
a2	Describe the role of antibiotics resistance and stewardship	• Interactive lectures • Self-learning Discussion	Written exam (mid and final terms and quizzes)
a3	List major types of HAIS and their preventive steps	• Interactive lectures • Self-learning Discussion	Written exam (mid and final terms and quizzes)
a4	List the domains and their contents for the practice standards and competencies	• Interactive lectures • Self-learning Discussion	Written exam (mid and final terms and quizzes)

(B) Alignment Course Intended Learning Outcomes of Intellectual Skills to Teaching Strategies and Assessment Strategies:

	Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
b1	Analyze the components of chain of the infection	• Interactive lectures • Self-learning • Discussion	Written exam (mid and final terms and quizzes)
b2	Summarize the engineering, work practice, and environmental controls that protect against healthcare-associated infections.	• Interactive lectures • Self-learning • Discussion	Written exam (mid and final terms and quizzes)

C Alignment Course Intended Learning Outcomes of Professional and Practical Skills to Teaching Strategies and Assessment Strategies:

	Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies

c1	**Apply** barriers and personal protective equipment for protection from exposure topotentially infectious material.	• Practical session	Practical exam

(D) Alignment Course Intended Learning Outcomes of Transferable Skills to Teaching Strategies and Assessment Strategies:

	Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
d1	Educate the general public and to assist patients through acceptable customer service interactions	Seminar	assignment
d2	**Demonstrate** oral and written effective communication skills,	Lectures	Seminar
d3	**Collaborate** with patients, communities, organizations, and with members of the health team.	Lectures	Seminar

III. Course Content:

Course Content:

A – Theoretical Aspect:

Order	Units/Topics List	Sub Topics List	Number of Weeks	contact hours	Learning Outcomes
1	- Introduction	Infection Control definition Infection control addresses factors Spread of microbial diseases Infection and disease Terminology in Epidemiology Normal microbial flora Types of microorganism:-	1	2	,a1,a3,b1,b2
2	Dynamic HAI transmission cycle	Types of infection: Hospital acquired (HAI) definitions Chain of infection: Breaking chain of infection:	1	2	,a1,a3,b1,b2
3	HAI infections	types, Impact of HAIs - Surgical site infection o HAI associated with intravenous device - Urinary tract HAI	1	2	,a1,a3,b1,b2

		Influencing factors on N.I 1. Susceptible host 2. The microbial agent 3. Environmental factors Criteria of Nosocomial Infections			
4	**Antibiotic resistance**	Classes Genetic components and mechanisms of Antibiotic resistance Epidemiologically important organisms Multi–drug-resistance *definition and tyoes* characteristics *of* Multi–drug-resistance organisms (MDRO) Controlling and decreasing antibiotic resistance	1	2	,a1,a3,b1,b2
5	**Antibiotics use in health-care facilities and principles of antibiotic policy**	Factors influencing of antimicrobial agent prescriptions clinical uses of antibiotics How are we using antibiotics antibiotic policy antibiotic stewardship Microbiology and antibiotic stewardship Surveillance of antimicrobial resistance	1	2	,a1,a3,b1,b2
6	**Standard Precautions**	Definition Hand hygiene Types and practice Personal Protective Equipment(PPE) types and practice precautions The selection of PPE	1	2	,a1,a3,b1,b2
7	Med term		1	2	,a1,a3,b1,b2
8	**Aseptic technique**	Aseptic techniques practices Non-touch technique Clean technique Principles of safe procedure Procedures with highest risk for causing infections Respiratory hygiene/cough etiquette	1	2	,a1,a3,b1,b2
9	**Management**	**Sharps :**	1	2	,a1,a3,b1,b2

	of Sharps & Waste	Prevention from injuries Safe-passing and disposable **Bio Medical Waste:** Sources, Types, Management Color coding Method of disposable			
10	**Blood borne pathogen prevention and management of occupational exposure**	**Blood borne Pathogens (BBPs):** Risk of BBP Transmission Modes of transmission of BBP Elements of Occupational Post Exposure Management of BBP:	1	2	,a1,a3,b1,b2
11	**Transmission-Based Precautions**	Airborne Precautions Droplet Precautions t Precautions Protective Isolation:	1	2	,a1,a3,b1,b2
12	**Environmental Cleaning and Disinfection:**	Environmental control The most common bacteria contaminate the hospital environment Basic concepts related with cleaning and disinfection Disinfectants classification Daily cleaning and disinfection Non touch methods	1	2	,a1,a3,b1,b2
13	**HAI in clinical Laboratory**	- Introduction - Types and practice - How to handle laboratory waste	1	2	,a1,a3,b1,b2
14	**Coronavirus in Yemen**	- hospitals & community	1	2	,a1,a3,b1,b2
15	Final exam		1	2	,a1,a3,b1,b2
Number of Weeks /and Units Per Semester			**15**	**30**	

B - Practical Aspect: (if any)

Order	Tasks/ Experiments	Number of Weeks	contact hours	Learning Outcomes
1	Infection control introduction	1	2	c1
2	Hand hygiene	1	2	c1
3	Personal protective equipment	1	2	c1
4	Aseptic, clean and sterile techniques	1	2	c1
5	Aseptic techniques in microbiology lab	1	2	c1
6	Standard and expanded practice	1	2	c, d1
7	Safe injection practice	1	2	c1
8	Spill management and waste management	1	2	c1,d3
9	Final practical exam	1	2	c1
Number of Weeks /and Units Per Semester		9	18	

V. Teaching Strategies of the Course:	
1-	Lectures:
2-	practical session
3-	Seminars

VI. Assessment Methods of the Course:

No	Assignment
1	Written Exams (Short Essays) and Quizzes
2	Multiple Choice Questions (MCQ)
3	Practical Exams (PE)

VII. Assignments:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
	Assignment		5	5%	_d1,d2,d3
1	**Midterm Exam**	8	15	15%	a1,a2,a3,a4,b1
2	**Practical exam**	14	30	30%	c1
3	**Final Exam**	16	50	50%	a1, a2, b1
	Total	100		100%	

VII. Learning Resources:	
· *Written in the following order: (Author - Year of publication – Title – Edition – Place of publication – Publisher).*	
1- Required Textbook(s) (maximum two).	
1-	Melanie S. Curless, MPH, RN, CIC,LaToya A.Forrester, MPH, CIC,Polly A. Trexler, MS, CIC . Infection Prevention and Control- Module 1. Introduction to Infection Prevention and ControL © 2018 by Jhpiego Corporation. All rights reserved.
2-	-Infections and infectious diseases, A manual for nurses and midwives In the WHO European Region.
2- Essential References.	
1-	IFIC Basic Concepts of Infection Control 2nd Edition - Revised 2011
2-	A Guide to Infection Control in the Hospital ,An official publication of the International Society for Infectious Diseases (ISID)-Fifth Edition.
3- Electronic Materials and Web Sites *etc*.	
1-	www.WHO.com
2-	www.CDC.com
3-	www.ASM.com

XI. *Course Policies:*	
1	**Class Attendance:** Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.
2	**Tardiness:** -If the student dose not attend for more than 6 times, the student will be obligated to withdrew from the course
3	**Exam Attendance/Punctuality:** No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed.

4	**Assignments & Projects:** Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same.
5	**Cheating:** Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
6	**Forgery and Impersonation:** Forgery/Impersonation is an act of fraud that results in the cancelation of the student's exam, assignment or project. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
7	**Other policies:** The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration